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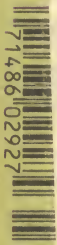
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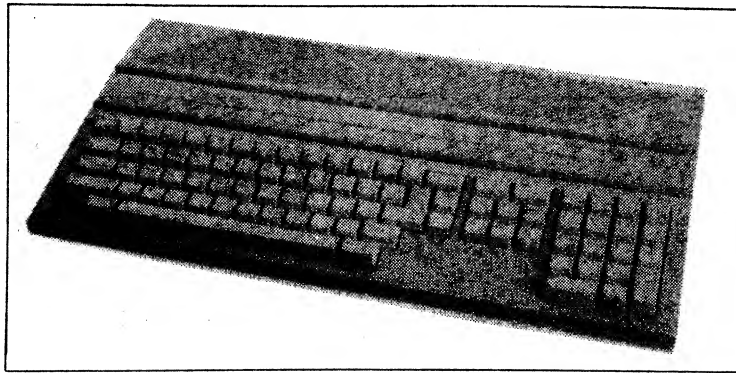
ATARI

This Is The Computer That Jack Built! The New Atari Corp. Introduces New Line at CES

By Computer Shopper Staff

When the Consumer Electronics Show in Las Vegas opened its doors on January 5th, all eyes were on the large Atari exhibit, roped off and guarded by uniformed people with large guns on their hips! In addition, all the machines were covered with drapes to shield them from curious eyes! We all wondered what could be going on here. After trying to enter by flashing a press badge and being repelled, we found out that the Governor of the State of Nevada and Jack Tremiel himself would formally open the booth at 9:45 a.m. Until then, everything was under wraps.

Soon a crowd gathered, lured by the sight of television, radio and local newspaper people setting up their equipment. By 10 a.m., the great ones arrived for the ceremony. There was the Governor of the state ready to proceed with the unveiling of the computers and Jack Tramiel, the creator, smiling on all who attended. The only thing lacking was a bishop to bless the event as they do for fishing fleets and packs of hunting hounds. You have to hand it to Jack. He upstaged all the other exhibitors at the show on the opening day. We could not help contrasting the vibrations of success in the Atari booth with the deep gloom prevailing in the next one. Here were the sad people representing Coleco and the Adam. Their booth was full of the wonderful things you could do with the Adam and all the new software and peripherals



**ATARI 520ST
PERSONAL COMPUTER**

recently introduced for this "reborn" computer. The trouble was that while setting up, Coleco announced the death of the Adam and the sales of the inventory to one unnamed discounter. The poor Adam people were trying to smile with the tradition of "the show must go on."

The New Atari Computers

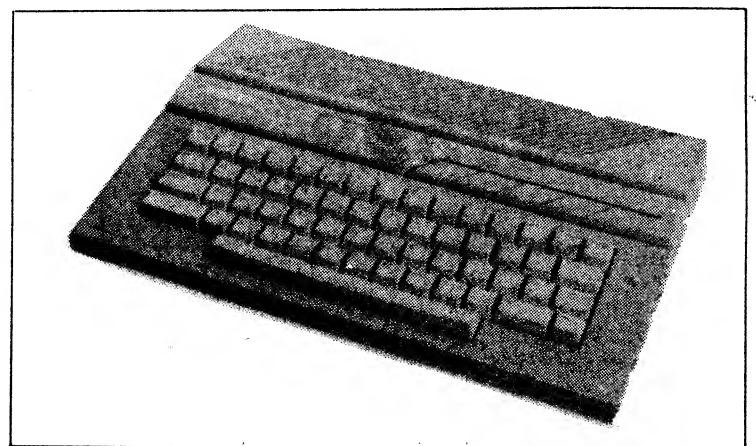
The hoopla in the Atari booth was based upon solid achievements. The new lines of Atari machines represent real progress when compared with the low expectations everyone had for that company prior to Jack Tramiel's take-over.

The Atari 65XE/130XE 8-Bit Computers

These are the direct descendents of the 800XL series

and retain compatibility including much of the excellent graphics and sound ability of the original. The 65XE is a 6502C machine operating at 1.79MHz clock speed. It uses custom graphic and sound chips and has an integrated self-test program. It boasts 64K of user RAM. The graphics include a 320 by 192 pixel color screen with 11 graphics' modes. There are 256 colors available and five text modes. The screen can scroll both horizontally and vertically, and there are special Player/Missile Graphics with collision detection.

The keyboard is a full stroke unit with graphics' functions on the front of the keys. Controller ports are provided on the rear panel for accessories and a serial I/O connector is provided for connection to printers, or to data storage



ATARI 65XE PERSONAL COMPUTER

units. There is a built-in cartridge slot and either the 1010 program cassette recorder or the 1050 disk drive can be used with the computer. Atari BASIC is built into the computer; Logo, Pilot and Assembler/Editor is also provided. The 65XE is compatible with all Atari XL software.

There are several additional versions of the 65XE including the 65XEM which adds music synthesis with eight voices covering the fundamental frequencies of 4.8Hz to 7.8KHz (10 2/3 octave range). The music sounds very rich due to a digital sample rate in excess

of 30kHz. There are 64 harmonics and the number of harmonics per voice is any multiple of two. This model is just the thing for music buffs, although all of the 65XE series have four independent voices ranging from .06Hz to 800kHz.

The 65XEP is a transportable version with a 5" monochrome CRT built in and a disk drive. This is intended for the business person on the go. However, we still do not like a 5" CRT and the idea of an Atari with a monochrome

Continued on page 56

Seduction. . . more than a game!



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Computer Jack Built Continued from page 53

screen does not seem to make much sense.

The star of the 65XE line, we feel, will be the Atari 130XE with 131,072 bytes of RAM memory. With this extra memory available for animation and extended graphics, users will be able to do really interesting things with the 8-bit line.

And Now For Something New From Atari

The 65XE 8-bit line are merely new versions of the 800XL computers, but Jack Tremiel promised new things from Atari and here they are—the Atari 130ST and 520ST, two new 16-bit M68000 based computers with all the bells and whistles of the

higher priced 16-biters. The secret is in the software, and Atari has incorporated Digital Research's GEM graphics environment into their TOS operating system. This includes such features as Icons, Drop-down menus, Windows, Vector drawing, GEM virtual device interface and application services. The graphics and screen applications are controlled by a two-button Mouse.

There are three graphics modes: Low resolution (320 x 200 pixels), Medium resolution (640 x 200 pixels), and High Resolution (640 x 400 pixels). In the medium and high resolution modes, there are 512 colors available—eight levels each of red, green and blue.

The music capability of the ST series has three voices, and a range from 30Hz to above

audible range. There are separate frequency and volume controls provided. The MIDI interface controls external music synthesizers.

The ST series has both a Centronics printer port and RS232C Serial for a modem or serial printer. Controllers for both a floppy disk interface and a hard disk are built in. There are two joystick ports and one is configured for the two button mouse.

The floppy disk system uses 3½" disks with capacities of either 250K or 500K capacity. There is also a 3½" hard disk of 10 Mbyte capacity available. In spite of all the disk-based input, cartridge input is still available for the ST computers.

The keyboard is an ergonomic design with a good feel



**ATARI 130ST
PERSONAL COMPUTER**

and an 18-key keypad. There is a cursor control cluster for easy use. The video line-up includes the ability to use a T.V., low-resolution composite video, medium-resolution RGB

monitor and a high-resolution monochrome monitor.

The 130ST comes with 131,072 bytes of RAM and

Continued on page 60

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XEROX

Words For Your Atari— S.A.M., The Software Review

by Russell Kavanagh
Meet S.A.M. (Software Automatic Mouth), a voice synthesis system that requires no additional hardware for a disk-based Atari. All voice synthesis is done in software, with output through voice zero. S.A.M. is available from Don't

Ask Computer Software. Using S.A.M. and a few BASIC statements, or from an assembly language program, you can generate very respectable speech through your TV or monitor speaker.

The S.A.M. disk contains several programs. In addition

to the actual speech synthesis program, which requires the use of phonetics, a program is provided that converts English text to speech. This allows you to enter whole words or phrases and hear them pronounced immediately. Also on the disk are several speech

demonstration programs, with preprogrammed texts and a number guessing game.

Upon booting S.A.M., I was able to produce speech in only minutes, using the demonstration programs. A well-written 40 page manual (5.5"x7.5") provides information on the

phonetic spelling system used by S.A.M., how to use S.A.M. from BASIC and with machine language, how to add stress to the speech, the effects of punctuation, and the use of pitch and speech speed controls. Also included is a listing of nearly 1500500 phonetic conversions of S.A.M.

My first listening impression of S.A.M. was that it was very "electronic-sounding", more so than hardware-based synthesizers. I noticed a buzz in some words, and some general background hissing and noise between phonemes. It also sounded like the poor guy (yes ladies, I think S.A.M. is a boy) had a terrible cold. But the speech was surprisingly good, in fact, bordering on exceptional, especially considering the low cost of the software and the general-purpose hardware with which it was working. And, as might be expected, the more I listened, the easier S.A.M. became to understand. I own a voice synthesizer based on the Votrax voice synthesizer chip, so I compared the two. I found that S.A.M.'s claim to sound equal to or better than hardware synthesizers to be reasonable, although the comparison is very subjective. Although I thought the tone of the hardware synthesizer was more pleasing, clarity was equal. In fact, I felt the English-to-text routine in S.A.M. was a little better at pronouncing words than the hardware unit.

So what are the disadvantages of S.A.M.? I see two. First, since S.A.M. is software based, it takes up room. The S.A.M. program itself uses nearly 9K, and the English-to-text routine requires an additional 6K. A second disadvantage, and one I consider the most serious shortcoming, is that S.A.M. blanks the screen while talking. Otherwise, gaps would be inserted into the speech every time direct memory access is performed during screen updating. Although S.A.M. can be forced to leave the screen display on while speaking, the result is badly distorted speech. Surprisingly, the speech is still fairly intelligible.

If you are looking for a low-cost voice synthesizer, then consider S.A.M. The phonetic spelling system is easy to master, since you don't need to

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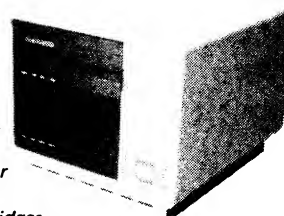
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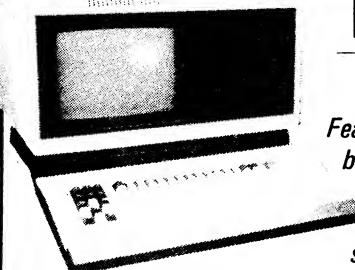
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DEALER INQUIRIES INVITED

Continued on page 60

Applying the Atari

by Jeff Brenner

This month's feature program is an on-screen alarm clock, ideal for those of you who have difficulty pulling away from your Atari to sleep, eat, work, etc. We'll also enter a joystick-tester program and a printer utility, and we'll look at two children's programs from Mindscape.

Adios Adam

At this writing, Coleco Industries Inc. officially dropped its Adam computer. It had been a tough, long year and a half for the Adam from the day

of its planned introduction in June of 1983. If not for their Cabbage Patch Kids, Coleco's story might have been a much, much sadder one. So you see, folks, Atari has lived to witness the fall of yet another competing computer product.

Atari News

A few days after Coleco's announcement, Atari displayed several of its new computers at the Las Vegas Winter Consumer Electronics Show. The new machines make up the "XE" line. One is a 64K, XL-compatible portable. The others are Atari's first 16-bit

units. We'll have more details on these models next month.

Reader Mail

I got this idea for a joystick testing program after an incident I had with a new game program. For days I tried to figure out why the game wasn't working like it was supposed to. Just when I was ready to bring the game back to the store, I found out that my joystick was not registering the up, or diagonally-up directions! Just run the program and move the joystick to each of the positions shown in the picture on the screen. If the joystick is

O.K. the program will say so. Otherwise, it will not let you go on past the non-working direction. It also checks the joystick trigger. I hope your readers find it handy.

*Ricky Freeman
Baton Rouge, Louisiana*

I'm sure they will. The program is listed under the "JOYSTICK TESTER" heading and has been slightly modified to facilitate its printing in the magazine. Thanks for writing.

I'm a novice Atari user and recently bought an Epson RX-80 printer. I'm very interested in using the printer to create graphics. A salesman told me I need a "screen dump," but since I am not familiar with this I am asking for your help.

*B.E. Grant
Newark, New Jersey*

Very simply, a screen dump

Continued on page 61

S.A.M.

Continued from page 58

be able to spell to program a word - you only need to be able to say it! The English-to-text program does a very respectable job in producing speech, but it does make mistakes. The most intelligible speech is produced using direct phonetic input, which allows placing inflection in speech and permits fine control of word pronunciation. Using phonetics is a bit tedious, and in itself uses more memory, since a word spelled phonetically almost always

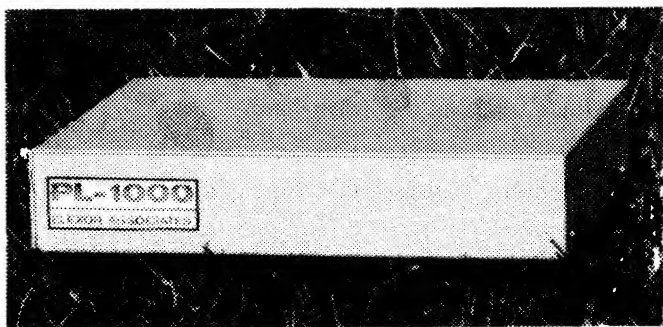
takes more characters than the straight English spelling. All of the demonstration programs and the English-to-text program can be copied onto your own DOS 2.0S disk. You cannot make a back-up copy of the actual speech synthesis program. A replacement copy can be obtained for \$5.00, though. If you aspire to sell programs utilizing S.A.M., a licensing agreement can be obtained from Don't Ask Software. The manual is well written, and will enable you to begin talking through your Atari in short

order. If, however, your application requires a simultaneous screen display and voice, then S.A.M. won't be able to do a very good job. But for easy to obtain and good sounding voice synthesis, S.A.M. is an excellent choice. The Software Automatic Mouth is available through

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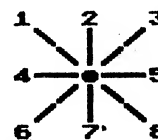
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JOYSTICK TESTER

```

INE 10 REM JOYSTICK TESTER
PNE 15 POKE 82,15:PRINT CHR$(125)
NJJ 20 READ A:IF A=-1 THEN PRINT :GOTO 20
NEE 30 IF A>-2 THEN PRINT CHR$(A);:GOTO 20
SNE 35 POKE 82,2:PRINT
NOJ 40 FOR I=1 TO 8:READ VALUE
CKJ 50 PRINT "MOVE JOYSTICK TO POSITION #";I
HPJ 60 IF STICK(0)<>VALUE THEN GOTO 60
DEJ 70 SOUND 0,10,12,8:FOR J=1 TO 50:NEXT J
KTJ 80 SOUND 0,0,0,0:PRINT "GOOD":NEXT I
FMJ 90 PRINT :PRINT "PRESS TRIGGER"
VAE 100 IF STRIG(0)=1 THEN GOTO 100
MTE 105 PRINT "GOOD"
YUJ 110 PRINT :PRINT "JOYSTICK IS WORKING!"
POJ 120 END
MKJ 130 DATA 49,32,32,50,32,32,51,-1
EWJ 140 DATA 32,7,32,124,32,6,-1
YIJ 150 DATA 32,32,7,124,6,-1
MWJ 160 DATA 52,18,18,20,18,18,53,-1
YKJ 170 DATA 32,32,6,124,7,-1
FAJ 180 DATA 32,6,32,124,32,7,-1
MXJ 190 DATA 54,32,32,55,32,32,56,-2
FLZ 200 DATA 10,14,6,11,7,9,13,5
  
```



Computer Jack Built

Continued from page 56

196K of ROM expandable to 320K with plug-in cartridges. The 520ST increases the RAM to 520K bytes. Language available at this time include BASIC and Logo.

Conclusions

You may read this and ask the most natural question "How much will all this cost?" As with the Commodore 128, we do not know. Prices were not announced, but rumors flew everywhere. The 65XE series was rumored to be in the "\$200 price range," the 130ST "around \$600," the hard disk \$500. None of these speculations drew more than a smile from the Atari crew. The motto of the New Atari Company

is "Power Without The Price." They have lived up to half of their motto. They have shown the power, but they have not given us the price!

The level of press cooperation has not changed at all at Atari. Their press kit was hardly complete, lacking even a phone number and a contact person within the company. Mr. James L. Copeland, VP Marketing, was listed as the contact person. We tried to contact Mr. Copeland after the show but no telephone number was given for him. We tried the general number and all we got was a recording telling us the lines were busy. Oh yes, they will publish their own magazine called Atari Explorer, which will get all the information first and will be their user contact.

Applying The Atari Continued from 60

is a routine which prints, or "dumps," the contents of the screen to the printer. The best way to draw graphics on your printer is to first create the image on the screen and then transfer the contents of the screen to the printer. Many graphics programs on the market contain a built-in screen dump that allows you to print displays created with the program. A screen dump to print displays created by your own BASIC programs is not difficult to design, and one is listed under the "GRAPHICS DUMP UTILITY" heading.

This program will print graphics created in GRAPHICS 6, 7, 8, 9, 10, 11, 14 and 15. GRAPHICS 8 works best. As is, it will work with most Epson, Gemini, or graphics-compatible printers. To use, simply GOTO 31000 after creating a display on a graphics screen. If your printer is properly connected and its power on, the graphics will be printed. The program will automatically compensate for graphics modes with or without a text window.

Higher horizontal resolution on the printer is possible by changing the MODE variable on line 31020. When MODE = 1, the resolution is 60 dots-per-inch. When

MODE = 2, the resolution is 120 dots-per-inch. On the Epson FX-80 and RX-80, and on the Gemini 10X and 15X, two additional modes (MODE = 3 and MODE = 4) may be used by adding the appropriate characters to the data in line 31080 of the subroutine. When MODE = 3, the double-speed, 120 dots-per-inch mode is activated. Quadruple density is available when MODE = 4. This gives a resolution of 240 dots-per-inch.

If you have an Epson, add ,Y,Z to the data statement in line 31080 so it reads:

31080 DATA K,L,Y,Z

If you have a Gemini, the two additional letters must be lower-case. Line 31080 will read:

31080 DATA K,L,y,z

Demo 1 and Demo 2 are sample BASIC graphics listed under their respective printer outputs. Enter Demo 1 without erasing lines 31000-31220 of the Graphics Dump Utility and run it. Your printer should display the same output. For the second demonstration, type NEW, load the Graphics Dump Utility into memory again, add Demo 2 and run it.

The Graphics Dump Utility differs from other screen dumps in that it prints horizontally on the paper, as it appears on the screen. Normally, a

graphics dump would print the image on its side. To correct this, our utility reads the screen sideways to yield an upright image printout.

Reminder

Next month's column will contain our first "Programming Tips" section. Program-

ming hints and ideas sent in by readers will be included here. If you have any programming suggestions, or short, handy programs from which others may benefit, send them in. Contributors whose ideas are printed will receive three-dimensional, laser-etched hologram stickers. Let me hear from you.

Imperfect Program Perfect

January's column contained some modifications to Program Perfect which originally appeared here in December. If you followed the article carefully, you should have had no problems in making the changes. However, I would understand if there was some confusion, as two lines of the program got squashed together in the typesetting department. Line 30260 should read as follows:

30260 IF T>650 THEN T = T-650

Program Perfect is used to prevent typing errors in programs entered from this column. It makes use of a three-letter code which precedes each line of the longer programs which appear here. If you're new to Computer Shopper (and I understand we're still gaining new readers at an amazing rate), you will find a complete listing of Program

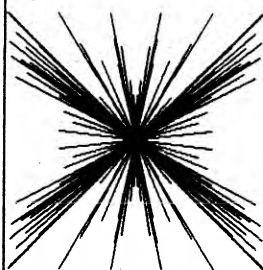
GRAPHICS DUMP UTILITY

```

10 REM GRAPHICS DUMP UTILITY
20 REM BY JEFF BRENNER
30 MODE=2: DIM A$(150), B$(320), S$(1): OPEN #1, B, 0, "P:" : RESTORE 31040
40 FOR I=1 TO PEEK(87)-4: READ BPL, VERT: NEXT I
50 IF BPL=0 THEN PRINT "UNSUPPORTED MODE": END
60 DATA 0, 0, 20, 80, 40, 80, 40, 160, 40, 160, 40, 160, 0, 0, 0, 0, 20, 160, 40, 160
70 IF PEEK(703)<4 THEN VERT=VERT+VERT/5
80 RESTORE 31080: FOR I=1 TO MODE: READ S$: NEXT I
90 DATA K, L
100 RESTORE 31160: FOR I=0 TO 91: READ A$: POKE 1536+I, A$: NEXT I
110 S=PEEK(88)+256*PEEK(89): PRINT #1; CHR$(27); CHR$(64); : BPL=BPL*8
120 PRINT #1; CHR$(27); CHR$(65); CHR$(8); : HI=INT(BPL/256): LO=BPL-HI*256
130 FOR I=1 TO INT(VERT/8+0.5): POKE 207, INT(S/256)
140 POKE 206, S-PEEK(207)*256: B$(1)=CHR$(0): B$(320)=CHR$(0): B$(2)=B$
150 A=USR(1536, ADR(B$)): PRINT #1; CHR$(27); S$: CHR$(LO); CHR$(HI);
160 PRINT #1; B$(1, BPL): S=S+BPL: NEXT I: END
170 DATA 104, 104, 133, 205, 104, 133, 204, 160, 0, 162, 8, 177, 206, 157
180 DATA 92, 6, 24, 165, 206, 105, 40, 133, 206, 165, 207, 105, 0, 133
190 DATA 207, 202, 208, 235, 198, 207, 56, 165, 206, 233, 64, 133, 206, 165
200 DATA 207, 233, 0, 133, 207, 169, 8, 133, 203, 162, 8, 177, 204, 62
210 DATA 92, 6, 42, 145, 204, 202, 208, 245, 198, 203, 165, 203, 240, 16
220 DATA 24, 165, 204, 105, 1, 133, 204, 165, 205, 105, 0, 133, 205, 76
230 DATA 51, 6, 200, 192, 40, 208, 174, 96

```

Demo 1

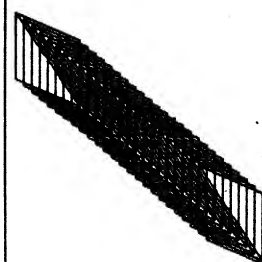


```

10 REM DEMO 1
20 GRAPHICS 24: COLOR 1: X=0: Y=191: I=X
30 TRAP 70
40 PLOT X, Y: DRAWTO 319-X, 191-Y
50 PLOT X, 191-Y: DRAWTO 319-X, Y
60 X=X+Y: Y=Y-X
70 IF X>319 THEN X=X-319: GOTO 70
80 IF Y>191 THEN Y=Y-191: GOTO 80
90 I=I+1: IF I<30 THEN GOTO 30
100 GOTO 31000

```

Demo 2



```

10 REM DEMO 2
20 GRAPHICS 24: COLOR 1: TRAP 90
30 FOR X=0 TO 300 STEP 10
40 Y=INT(X/2+0.5)
50 PLOT X, Y: DRAWTO X, Y+50
60 DRAWTO X+80, Y+70: DRAWTO X, Y
70 DRAWTO X+80, Y+20: DRAWTO X+80, Y+70
80 NEXT X
90 GOTO 31000

```

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